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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,547	08/22/2003	Hitoshi Wada	OHT-0021	9176

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EXAMINER	
RAO, G NAGESH	
ART UNIT	**PAPER NUMBER**
1722	

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,547	WADA ET AL.	
	Examiner	Art Unit	
	G. Nagesh Rao	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on 9/14/05

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,8-10,14-27 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,8-10,14-27 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1) Claims 1, 8-10, and 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota (US Patent No. 4,661,053) in view of Lemelson (US Patent No. 3,774,890) in further view of Hehl (US Patent No. 6769892).

Yokota 053 teaches a plastic magnet injection molding machine capable of manufacturing an anisotropic formed body in which there is a pair of upper and lower electrical coils (10 and 24) enabling for a magnetic

device to create magnetic fields around upper and lower mold portions whereby movable platen 14 is pushed forward to mold platen 22 indicating that a driving means would be required to push the two mold platens toward each other (14 and 22) (See Figures 1 and 1a).

Hara 621 eludes to the use of the molding block for an injection molding machine but fails to teach the specifics of the machine, as claimed by the applicant.

Lemelson 890 pertains to apparatuses (As seen in Figures 1-6) for working moldable material (i.e. an injection molding machine) where it is capable of manufacturing anisotropic formed bodies through the use of an electromagnet coil (25) which may be made of superconducting wire and is capable of generating magnetic waves onto the material being fed through the mold die (16), where the magnetic wave strength specified is a recitation of intended use and the magnet could be capable of achieving a basic flux density of 1 to 10 T. The molding apparatus can be comprised of either an extruder of injection molding apparatus as taught by Lemelson 890's specification (Col 1 Lines 21-27) which has a driving device means for at least one of the mold and the heating device in the barrel axis direction of the superconducting coil, which would be in the form of a linear actuator (See Fig 1 Element 21).

Furthermore the apparatus taught by Lemelson 890 discusses the use of an electrical induction coil (24) surrounding the chamber (12) and controllably operable to heat the material within the chamber. This heating element would follow before the operation of the electromagnetic coil's (25) onto the material processed within the apparatus. Following which a liquid coolant material would flow through the molding die (16c and 16), which is adjacent to the electromagnetic coil's (25) for the purpose of cooling the coils (Col 4 Lines 51-68).

At the time of the invention it would have been obvious to one with ordinary skill in the art to affix the device of Lemelson 890 with Yokota 053, via replacing the upper and lower electrical coilings for regular magnetic fields with that of a pair of superconducting coils as taught by Lemelson 890 in order to harness a much stronger magnetic field. Furthermore Yokota 053 explicitly stated that its molding setup was designed for use with injection molding machines, such as taught by Lemelson 890 and therefore it would make sense to combine the teachings for a much more optimal machine.

Although the hypothetical teachings elude to a driving means for moving the movable mold platen towards the stationary mold platen (reading on as upper and lower platens), it is not explicitly taught.

In an apparatus pertaining to injection molding Hehl 892 teaches a plastic molding machine (See Figures 1 and 2) where there is a drive unit (50) for operating the molding unit (See Abstract).

At the time of the invention it would have been obvious to one with ordinary skill in the art to incorporate the teachings of Hehl 892 into the aforementioned hypothetical construct of Yokota 053 and Lemelson 890, to have a more automated means of operation.

2) Claims 9 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota (US Patent No. 4,661,053) in view of Lemelson (US Patent No. 3,774,890) in further view of Hehl (US Patent No. 6769892) in further view of Watanabe (US PG Publication 2002/0045126 A1).

The hypothetical device taught by the combined teachings of Yokota 053 and Lemelson 890 taught in the aforementioned an apparatus for working moldable materials via a magnetic coil system.

However Lemelson 890 lacks the specific teaching of incorporating a photo-setting mold as the specified mold in use of operation by the apparatus.

Watanabe 126 teaches the benefits and use of a photo-fabricated mold (which reads on photo-setting mold) for the likes of an injection mold

apparatus. It is taught by Watanabe 126 the desire and means for creating and using a photo-fabricating objects possessing sufficient mechanical strength, pressure resistance, and heat resistance as demanded of such a resin-based mold (See Abstract).

Therefore at the time of the invention it would have been obvious to one skilled in the art to modify the aforementioned hypothetical device to incorporate the improved teachings of Watanabe 126 to ensure a more durable mold used in an energy intensive device such as the one constructed by Yokota 053, Lemelson 890 and Hehl 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUANE SMITH
PRIMARY EXAMINER
11-28-05

GNR